

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	24	("authority weight" and "hub weight") and rank\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 18:48
L2	9	1 and (backward forward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 17:23
L3	15	1 not 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 19:56
L5	10	canright-geoffrey.inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 20:00
L6	5	engo-monsen-kenth.inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 20:05
L7	1	"authority rank" and "hub rank"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/25 20:05
S1	2	"20050086260"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:03
S2	2258	rank\$3 with document	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:04

## EAST Search History

S3	710	S2 and node	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:04
S4	21	S3 and (authority or hub) with weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:04
S5	5	S4 and (forward and backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:30
S7	32	("20020038350" "20020129014" "20020198869" "20040006742" "6112202" "6112203" "6182065" "6285999" "6321220" "6353825" "6356899" "6526440" "6560600" "6591261" "6665665" "6701312").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:14
S8	24	S7 and rank\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:14
S9	20	S8 and (weight or score)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:15
S10	5	S9 and authority and hub	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:15
S11	2	S10 and forward and backward	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:18

## EAST Search History

S12	10	S2 and (forward or backward) with operator	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:19
S13	10	S12 and (weight or score)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:19
S14	3	S13 and (authority or hub)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:22
S15	7	S13 not S14	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:26
S16	1348	rank\$3 with node	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:26
S17	7	S16 and (authority or hub) with weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:27
S18	5	S17 and (forward or backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:27
S20	1398	non\$compound or non\$normalized	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 13:09

## EAST Search History

S21	2	non\$compound and non-normalized	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/20 00:31
S23	1	"20060036583"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 13:08
S24	876	web with ranking	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 13:08
S25	1398	non\$compound or non\$normalized	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 13:09
S27	4	S24 and S25	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 17:58
S29	1196	unnormaliz\$5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 17:59
S30	0	S29 and ((authority or hub) with weight)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 18:19
S31	63	S29 and forward and backward	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 18:01

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S32	15	S31 and weight	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 18:12
S33	84	(web with search\$3) and (ranking and hits) and (link with analysis)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 18:12
S34	7	S33 and ((authority or hub) with weight)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/21 18:19
S35	77	(node with weight) and (forward with vector)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 16:05
S36	27	S35 and convergence	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 16:05
S37	1	S36 and (normaliz\$3 with node)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 16:06
S39	5	S36 and (normaliz\$3 with weight)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 17:16
S41	5	(forward with weight) and (normalize with weight) and convergence	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 17:16

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S42	4	S41 and constant	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/24 17:17
S43	55	(authority and hub) with (weight or score)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:42
S44	2	S43 and (independent decoupl\$2) with (calculat\$3 mathematic\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:40
S45	3	S43 and (independent decoupl\$2) same (calculat\$3 mathematic\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:36
S46	155	(authority and hub) with (weight or score comput\$3 calculat\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:41
S47	2	S46 and (independent decoupl\$2) with (calculat\$3 mathematic\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:41
S48	3	S46 and (independent decoupl\$2) same (calculat\$3 mathematic\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:41
S49	33	S43 and (authority and hub) with (comput\$3 calculat\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:41

## EAST Search History

S50	11	S49 and (fowward backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 20:43
S51	4	S43 and (authority with forward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:39
S52	3	S43 and (hub with forward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:39
S53	3	S43 and (hub with backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:39
S54	1	S43 and (authority and hub) with (decoupl\$3 independent)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:42
S56	22	S43 not S49	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 21:43
S57	4	(authority with forward) and (hub with backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 22:12
S58	4	(authority and hub) with (forward and backward)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/10/15 22:12
S62	20197	("707").CLAS.	USPAT	OR	OFF	2007/05/24 10:47

## EAST Search History

S63	71198	(search\$3 or navigat\$3 or retriev\$3). clm.	USPAT	OR	ON	2007/05/24 10:47
S64	8344	S62 and S63	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/05/24 10:47




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### 1 [Link analysis ranking: algorithms, theory, and experiments](#)



Allan Borodin, Gareth O. Roberts, Jeffrey S. Rosenthal, Panayiotis Tsaparas

 February 2005 **ACM Transactions on Internet Technology (TOIT)**, Volume 5 Issue 1

Publisher: ACM Press

Full text available: pdf(1.72 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The explosive growth and the widespread accessibility of the Web has led to a surge of research activity in the area of information retrieval on the World Wide Web. The seminal papers of Kleinberg [1998, 1999] and Brin and Page [1998] introduced *Link Analysis Ranking*, where hyperlink structures are used to determine the relative *authority* of a Web page and produce improved algorithms for the ranking of Web search results. In this article we work within the hubs and authorities fram ...

**Keywords:** Bayesian, HITS, Web search, link analysis, ranking

### 2 [Ranking: Using non-linear dynamical systems for web searching and ranking](#)



Panayiotis Tsaparas

 June 2004 **Proceedings of the twenty-third ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems PODS '04**

Publisher: ACM Press

Full text available: pdf(262.96 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

In the recent years there has been a surge of research activity in the area of information retrieval on the World Wide Web, using link analysis of the underlying hypertext graph topology. Most of the algorithms in the literature can be described as dynamical systems, that is, the repetitive application of a function on a set of weights. Algorithms that rely on eigenvector computations, such as HITS and PAGERANK, correspond to linear dynamical systems. In this work we consider two families of lin ...

### 3 [Finding authorities and hubs from link structures on the World Wide Web](#)



Allan Borodin, Gareth O. Roberts, Jeffrey S. Rosenthal, Panayiotis Tsaparas

 April 2001 **Proceedings of the 10th international conference on World Wide Web WWW '01**

Publisher: ACM Press

Full text available: pdf(269.01 KB)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** Bayesian, Kleinberg's algorithm, SALSA, authorities, hubs, link analysis, threshold, web searching

4 Links for a better web: Refinement of TF-IDF schemes for web pages using their hyperlinked neighboring pages



Kazunari Sugiyama, Kenji Hatano, Masatoshi Yoshikawa, Shunsuke Uemura

August 2003 **Proceedings of the fourteenth ACM conference on Hypertext and hypermedia HYPERTEXT '03**

**Publisher:** ACM Press

Full text available: pdf(211.25 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#)

In IR (information retrieval) systems based on the vector space model, the TF-IDF scheme is widely used to characterize documents. However, in the case of documents with hyperlink structures such as Web pages, it is necessary to develop a technique for representing the contents of Web pages more accurately by exploiting the contents of their hyperlinked neighboring pages. In this paper, we first propose several approaches to refining the TF-IDF scheme for a target Web page by using the contents ...

**Keywords:** TF-IDF scheme, WWW, hyperlink, information retrieval

5 SALSA: the stochastic approach for link-structure analysis



R. Lempel, S. Moran

April 2001 **ACM Transactions on Information Systems (TOIS)**, Volume 19 Issue 2

**Publisher:** ACM Press

Full text available: pdf(180.81 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#)

Today, when searching for information on the WWW, one usually performs a query through a term-based search engine. These engines return, as the query's result, a list of Web pages whose contents matches the query. For broad-topic queries, such searches often result in a huge set of retrieved documents, many of which are irrelevant to the user. However, much information is contained in the link-structure of the WWW. Information such as which pages are linked to others can be used to augment search ...

**Keywords:** Link-structure analysis, SALSA, TKC effect, hubs and authorities, random walks

6 Stable algorithms for link analysis



Andrew Y. Ng, Alice X. Zheng, Michael I. Jordan

September 2001 **Proceedings of the 24th annual international ACM SIGIR conference on Research and development in information retrieval SIGIR '01**

**Publisher:** ACM Press

Full text available: pdf(208.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#)

The Kleinberg HITS and the Google PageRank algorithms are eigenvector methods for identifying "authoritative" or "influential" articles, given hyperlink or citation information. That such algorithms should give reliable or consistent answers is surely a desideratum, and in~\cite{ijcaiPaper}, we analyzed when they can be expected to give stable rankings under small perturbations to the linkage patterns. In this paper, we extend the analysis and show how it gives insight into ways of de ...

## 7 A survey of Web metrics



Devanshu Dhyani, Wee Keong Ng, Sourav S. Bhowmick

December 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 4

**Publisher:** ACM Press

Full text available: [pdf\(289.28 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The unabated growth and increasing significance of the World Wide Web has resulted in a flurry of research activity to improve its capacity for serving information more effectively. But at the heart of these efforts lie implicit assumptions about "quality" and "usefulness" of Web resources and services. This observation points towards measurements and models that quantify various attributes of web sites. The science of measuring all aspects of information, especially its storage and retrieval or ...

**Keywords:** Information theoretic, PageRank, Web graph, Web metrics, Web page similarity, quality metrics

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IET JNL IET Journal or Magazine

IEEE CNF IEEE Conference Proceeding

IET CNF IET Conference Proceeding

IEEE STD IEEE Standard

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IEEE CNF IEEE Conference Proceeding

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IEEE STD IEEE Standard

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IEEE CNF IEEE Conference Proceeding

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**Backward and forward non-normalized link weight analysis method ...**

As noted previously, the present invention uses the **Forward operator** to obtain **authority**-like scores and the **Backward operator** to obtain **hub**-like scores. ...

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**Method, system, and computer program product for ranking of ...**

Similarly, b is the normalized version of the **backward operator** B. ... Without such a **weight** distribution, a meaningful **ranking** of documents becomes ...

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the symbolb conveys the meaning of a normalized **backward operator**, whose .....

'**authority**' **weight**, via one or more intermediate 'pointing' or '**hub**' nodes. ...

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**Backward and forward non-normalized link weight analysis method ...**

One then seeks a rule for assigning a **weight** or importance to each node ... for finding node **ranking** weights: a non-normalized **Forward operator** F and a ...

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